

AMENDMENT TO THE CLAIMS

Please **REINSTATE** claims 9-12.

Please **AMEND** claims 1 and 7-12 as follows.

Please **ADD** claims 13-19 as follows.

A copy of all pending claims and a status of the claims are provided below.

1. (currently amended) A vacuum pressure booster comprising:

a booster shell;

a booster piston accommodated inside the booster ~~shall~~ shell and partitioning the interior of the booster shell into a front side vacuum pressure chamber communicating with a vacuum pressure source and a rear side operation chamber;

a valve cylinder communicating with the booster piston, the valve cylinder including:

a valve piston fitted into the valve cylinder to be slidable in a forward and rearward direction of the valve cylinder;

an input rod coupling with the valve piston at a front end thereof;

a control valve switching communication of the operation chamber with the vacuum pressure chamber and with air in accordance with a forward and rearward movement of the input rod between the valve piston and the valve cylinder; and

an input return spring for pushing the input rod backward, and
the control valve including:

an annular vacuum pressure introducing valve seat formed in the valve cylinder;

an atmosphere introducing valve seat formed in the valve piston and arranged inside the vacuum pressure introducing valve seat;

a valve body including: an annular attaching bead portion airtightly attached to the valve cylinder; an expansion cylinder portion extending in the axial direction from the attaching bead portion; and an annular valve portion communicating with a forward end portion of the expansion cylinder portion and opposed to the vacuum

pressure introducing valve seat and the atmosphere introducing valve seat so as to seat thereon; and

a valve spring for pushing the valve portion so as to seat on the vacuum pressure introducing valve seat and the atmosphere introducing valve seat,

wherein a first port communicating with the vacuum pressure chamber is opened on the outer circumferential side of the vacuum pressure introducing valve seat,

a second port communicating with the operation chamber is opened between the vacuum pressure introducing valve seat and the atmosphere introducing valve seat in such a manner that the inner circumferential side of the valve portion is communicated with the atmosphere,

the attaching bead portion is tightly held by between a pair of cylindrical holding portions formed in a pair of valve holders attached to the valve cylinder,

an annular recess portion and an annular protruding portion of the pair of cylinder holding portions are elastically engaged with each other, and

the a diameter of the cylindrical holding portions is smaller than the inner diameter of the valve cylinder.

2. (original) The vacuum pressure booster according to claim 1, wherein at least one of the pair of valve holders is engaged on the inner circumferential face of the valve cylinder through a seal member.

3. (original) The vacuum pressure booster according to claim 1, wherein a cylindrical connecting portion engaging with an outer circumferential face of one valve holder having the holding portion for holding an inner circumferential face of the attaching bead portion is integrally formed in the other valve holder having the holding portion for holding an outer circumferential face of the attaching bead portion.

4. (original) The vacuum pressure booster according to claim 2, wherein a cylindrical connecting portion engaging with an outer circumferential face of one valve holder having the holding portion for holding an inner circumferential face of the attaching bead portion is integrally formed in the other valve holder having the holding portion for holding an outer circumferential face of the attaching bead portion.

5. (original) The vacuum pressure booster according to claim 3, wherein a recessing and a protruding portion elastically engaged with each other are formed on respective engaging faces between the pair of valve holders.

6. (original) The vacuum pressure booster according to claim 4, wherein a recessing and a protruding portion elastically engaged with each other are formed on respective engaging faces between the pair of valve holders.

7. (currently amended) The vacuum pressure booster according to claim 1, wherein the valve portion is slidably fitted on ~~the~~ an inner circumferential face of the valve cylinder, a forward annular chamber and a rear annular chamber are formed in the valve cylinder,

the forward annular chamber is communicated with the first port and the rear annular chamber is communicated with the second port,

a forward annular chamber is closed by ~~the~~ a front face of the valve portion when the valve portion is seated on the vacuum pressure introducing valve seat, and

a back face of the valve portion is facing to a rear annular chamber.

8. (currently amended) The vacuum pressure booster according to claim 2, wherein the valve portion is slidably fitted on ~~the~~ an inner circumferential face of the valve cylinder, a forward annular chamber and a rear annular chamber are formed in the valve cylinder,

the forward annular chamber is communicated with the first port and the rear annular chamber is communicated with the second port,

a forward annular chamber is closed by ~~the~~ a front face of the valve portion when the valve portion is seated on the vacuum pressure introducing valve seat, and

a back face of the valve portion is facing to a rear annular chamber.

9. (currently amended) The vacuum pressure booster according to claim 3, wherein the valve portion is slidably fitted on ~~the~~ an inner circumferential face of the valve cylinder,

a forward annular chamber and a rear annular chamber are formed in the valve cylinder,

the forward annular chamber is communicated with the first port and the rear annular chamber is communicated with the second port,

a forward annular chamber is closed by ~~the~~ a front face of the valve portion when the valve portion is seated on the vacuum pressure introducing valve seat, and

a back face of the valve portion is facing to a rear annular chamber.

10. (currently amended) The vacuum pressure booster according to claim 4, wherein the valve portion is slidably fitted on ~~the~~ an inner circumferential face of the valve cylinder,

a forward annular chamber and a rear annular chamber are formed in the valve cylinder,

the forward annular chamber is communicated with the first port and the rear annular chamber is communicated with the second port,

a forward annular chamber is closed by ~~the~~ a front face of the valve portion when the valve portion is seated on the vacuum pressure introducing valve seat, and

a back face of the valve portion is facing to a rear annular chamber.

11. (currently amended) The vacuum pressure booster according to claim 5, wherein the valve portion is slidably fitted on ~~the~~ an inner circumferential face of the valve cylinder,

a forward annular chamber and a rear annular chamber are formed in the valve cylinder,

the forward annular chamber is communicated with the first port and the rear annular chamber is communicated with the second port,

a forward annular chamber is closed by ~~the~~ a front face of the valve portion when the valve portion is seated on the vacuum pressure introducing valve seat, and

a back face of the valve portion is facing to a rear annular chamber.

12. (currently amended) The vacuum pressure booster according to claim 6, wherein the valve portion is slidably fitted on ~~the~~ an inner circumferential face of the valve cylinder,

a forward annular chamber and a rear annular chamber are formed in the valve cylinder,

the forward annular chamber is communicated with the first port and the rear annular chamber is communicated with the second port,

a forward annular chamber is closed by ~~the~~ a front face of the valve portion when the valve portion is seated on the vacuum pressure introducing valve seat, and

a back face of the valve portion is facing to a rear annular chamber.

13. (new) The vacuum pressure booster according to claim 1, wherein the cylindrical holding portions are positioned away from the valve cylinder wall to hold the attaching bead portion away from the valve cylinder.

14. (new) The vacuum pressure booster according to claim 1, wherein the annular valve portion faces in a same direction and is integrally formed.

15. (new) The vacuum pressure booster according to claim 1, wherein the cylindrical connecting portion of the front valve holder is integrally connected with a flange portion of the front valve holder.

16. (new) The vacuum pressure booster according to claim 1, further comprising a cylindrical connecting portion of a front valve holder is engaged with an outer circumference of an engaging portion of a rear valve holder of the pair of valve holders.

17. (new) The vacuum pressure booster according to claim 16, wherein the annular recess portion and the annular protruding portion are formed in engaging faces of a connecting portion and the engaging portion of the front valve holder and the rear valve holder, respectively, of the pair of valve holders.

18. (new) The vacuum pressure booster according to claim 17, wherein the connecting portion is engaged with the valve cylinder.

19. (new) A vacuum pressure booster comprising:
a booster shell;
a booster piston inside the booster shell and partitioning the interior of the booster shell into a front side vacuum pressure chamber communicating with a vacuum pressure source and a rear side operation chamber;
a valve cylinder communicating with the booster piston, the valve cylinder including:
a valve piston fitted into the valve cylinder to be slidable in a forward and rearward direction of the valve cylinder;
an input rod coupling with the valve piston at a front end thereof;
a control valve switching communication of the operation chamber with the vacuum pressure chamber and with air in accordance with a forward and rearward movement of the input rod between the valve piston and the valve cylinder; and
an input return spring for pushing the input rod backward, and
the control valve including:

an annular vacuum pressure introducing valve seat formed in the valve cylinder;

an atmosphere introducing valve seat formed in the valve piston and arranged inside the vacuum pressure introducing valve seat;

a valve body including: an annular attaching bead portion airtightly attached to the valve cylinder; an expansion cylinder portion extending in the axial direction from the attaching bead portion; and an annular valve portion communicating with a forward end portion of the expansion cylinder portion and opposed to the vacuum pressure introducing valve seat and the atmosphere introducing valve seat so as to seat thereon; and

a valve spring for pushing the valve portion so as to seat on the vacuum pressure introducing valve seat and the atmosphere introducing valve seat,

wherein a first port communicating with the vacuum pressure chamber is opened on the outer circumferential side of the vacuum pressure introducing valve seat,

a second port communicating with the operation chamber is opened between the vacuum pressure introducing valve seat and the atmosphere introducing valve seat in such a manner that the inner circumferential side of the valve portion is communicated with the atmosphere, and

the attaching bead portion is tightly held between a pair of cylindrical holding portions formed in a front valve holder and a rear valve holder, the front valve holder including a connecting portion that is positioned between the valve cylinder and an engaging portion of the rear valve holder.

20. (new) The vacuum pressure booster according to claim 19, wherein the front valve holder and the rear valve holder include an annular recess portion and an annular protruding portion, respectively, which are elastically engaged with each other.